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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,284	04/19/2007	Anwar Abumustafa	588.1076	8086

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EXAMINER	
BAYOU, AMENE SETEGNE	
ART UNIT	PAPER NUMBER
3746	
MAIL DATE	DELIVERY MODE
11/24/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/590,284	ABUMUSTAFA, ANWAR	
	Examiner	Art Unit	
	AMENE S. BAYOU	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) *1-6 and 12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-11 and 13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 July 2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 7-11 and 13 are rejected under 35 U.S.C 103(a) as being unpatentable over Applicant's admitted prior art of figure 1, in view of Termansen et al (3978879) further in view of Nirasawa et al. (WO03/040599 which is functionally equivalent to US 7146998) .

3. In re claim 7 and 8 Abumustafa disclose the claimed invention (***as an admitted prior art)*** including:

- A pump ,in figure 1,comprising: a flow-control valve device including a piston (1) displaceably accommodated within a piston bore (3), the piston bore (3) having at least one inflow channel (7) and at least one outflow channel (13) , and the piston (1) having an axial inflow orifice (9) and a plurality of radial, lateral outflow orifices (11) and a circumferential outflow groove (21) disposed between a first collar (19) and a second collar (17), the second collar (17) forming a control edge (15) for an outflowing fluid flow, the axial inflow orifice (9) extending at least to a beginning of the radial, lateral outflow orifices (11) . The admitted prior art (APA),however fail to disclose the following limitation which is taught by Termanesen et al. :

- Axial inflow orifice (60) extending cylindrically to a beginning of radial outflow orifices (58),in figure 1.Abumustafa's admitted prior art in view of Termanesen et al. however fails to disclose the following limitation which is taught by Nirasawa et al.
- The circumferential outflow groove (44). expanding in terms of a radial depth on an outer circumference of the piston (40) towards the control edge, wherein the outflow groove expands in a conical form on a piston side and, as the result of a radially, inwardly directed arc, subsequently reaches a greatest depth in a region of the control edge (clearly shown in figure 1).

4. It would have been obvious to one skilled in the art at the time the invention was made to modify the admitted prior art flow control valve by making the axial inflow orifice in cylindrical shape as taught by Termanesen et al. in order to prevent increase in flow velocity and thus pressure drop. Also it would have been obvious to one skilled in the art at the time the invention was made to modify the modified valve of APA and Termanesen et al. by making the circumferential outflow groove to expand in terms of radial depth upto a control edge as taught by Nirasawa et al in order to have smooth flow transition between the discharge orifice and an outlet connection (the curved surface has aero dynamical shape and thus flow resistance and accompanied loss is reduced)

5. In re claim 9 once modified by Termanesen et al. and Nirasawa et al it is clear that the valve of APA will have radial outflow orifices whose diameter

extend from the axial ,cylindrical inflow orifice into the radially ,inwardly directed arc in the control edge region.

6. In re claim 10 , 11 and 13 Abumustafa disclose (as an admitted prior art) that the piston (1) includes a third collar (18), and the first and second collars have circumferential pressure-equalization grooves (20),in figure 1 ,and that the pump is a power-steering pump (abstract). Termanesen et al also disclosed that the flow control valve is to be used in power steering pump application (see abstract).

Response to Arguments

7. Applicant's arguments, see pages 3 and 4, filed 07/31/09, with respect to claims 7-13 under 35 U.S.C 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Termanesen et al. and Nirasawa et al.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amene S. Bayou whose telephone number is 571-270-3214. The examiner can normally be reached on Monday-Thursday, 9:00 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.Information regarding the status of an application may

be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art Unit 3746